

## $(H, K)$ -STABILITY OF GRAPHS

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A graph  $G$  is called  $(H; k)$ -vertex stable if  $G$  contains a subgraph isomorphic to  $H$  even after removing any of its  $k$  vertices.  $\text{Stab}(H; k)$  denotes the minimum size among the sizes of all  $(H; k)$ -vertex stable graphs. In this paper we deal with  $(C_n; k)$ -vertex stable graphs with minimum size. For each  $n$  we prove that  $\text{stab}(C_n; 1)$  is one of only two possible and we give the exact value for infinitely many  $n$ 's. Furthermore we establish an upper and lower bound for  $\text{stab}(C_n; k)$  for  $k \geq 2$ . We also give an upper bound for  $(H; 1)$ , where  $H$  is a union of some graphs.

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